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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,706	01/26/2001	Nadim Abdo	MS158524.1	6799

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AMIN & TUROCY, LLP  
24TH FLOOR, NATIONAL CITY CENTER  
1900 EAST NINTH STREET  
CLEVELAND, OH 44114

EXAMINER

NGUYEN, KIMBINH T

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/770,706	<b>Applicant(s)</b> ABDO, NADIM	
	<b>Examiner</b> Kimbinh T. Nguyen	<b>Art Unit</b> 2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-11, 17-25 and 27-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 13-25 and 27-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This action is responsive to amendment filed 11/02/05.
2. Claims 1-4, 6-11, 13-25, 27-29 are pending in the application.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-11, 17-25 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cobral et al. (6,697,062) in view of Miller et al. "On-the-Fly Texture Computation for Real-Time Surface Shading", IEEE 1998.

**Claim 1**, Cabral et al. discloses rendering an image of an object having a curved surface (sphere map; a physical sphere whose surface BRDF matches that of the target object; col. 9, lines 35-38; fig. 2), comprising: a determiner that determines M number of attributes relating to rendering the image, M being an integer (a number of source viewing vectors M; col. 6, lines 32-34); Miller et al. teaches determines a diffuse lighting component and at least one of an ambient lighting component, a specular lighting component, an intensity, a pole vector, an equator, a latitude, a longitude, a color and a texture (page 45, left-hand col., line 7- page 49, right-hand col., line 27); Cabral et al. teaches a first processor that that pre-computes N number of attributes relating to rendering the image (pre-processing stage; or pre-integrated: performing the warping between the sample

Art Unit: 2671

images; col. 18, lines 11-24), N being an integer less than or equal to M (where M is less than N; col. 6, line 34), and a second processor a computer system 900 that includes one or more processors; col. 15, lines 63-67) that computes the M number of attributes (col. 6, lines 32 through col. 7, line 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate computing diffuse shading taught by Miller into the environment map of Cabral for diffuse and specular reflection of multiple light sources plus reflection of an environment map, because it would provide efficient spherical reflection mapping for smooth surfaces.

**Claim 2**, Cabral et al. discloses 2 the N number of attributes having characteristics associated with the symmetrical nature of objects (col. 10, lines 43-58).

**Claims 3 and 4**, Cabral et al. discloses the M number of attributes including one or more light source; one or more viewing positions (a number of source viewing vectors; (e.g., three; col. 6, lines 35-36).

**Claim 6**, Cabral et al. discloses the first processor pre-computer pixels, characterized by an attribute, a y attribute and a z attribute (col. 12, lines 5-29), at least one of diffuse lighting component (col. 7, line 43); specular lighting component (col. 10, lines 58-59).

**Claim 7**, Cabral et al. teaches the first processor pre-computes and edge buffer (frame buffer; col. 12, lines 41-52).

**Claims 8-10**, Cabral et al. discloses the object is a lit sphere (col. 9, lines 1-2; fig. 2); a texture sphere (texture coordinates for a sphere map; col. 11, lines 55-56) ; bump-mapped (col. 1, lines 56-67).

**Claims 11, 13-20, 22-25 and 27-29**, the rationale provided in the rejection of claims 2-4, 6-10 are incorporated herein.

**Claim 21**, Cabral et al. teaches a computer readable medium having computer executable instructions (col. 19, lines 27-31).

### ***Response to Arguments***

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimbinh T. Nguyen whose telephone number is (571) 272-7644. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Friday from 7:00 AM to 3:30 PM.

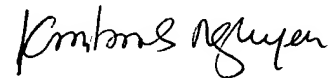
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached at (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information

Art Unit: 2671

for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 9, 2006



**KIMBINH T. NGUYEN  
PRIMARY EXAMINER**